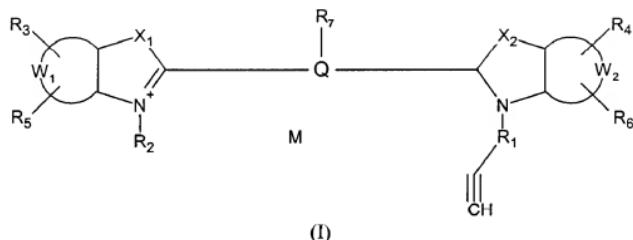


### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims:

1. (currently amended) A cyanine modified with an alkynyl-linker arm, having the following general formula (I), including the valence tautomers thereof:



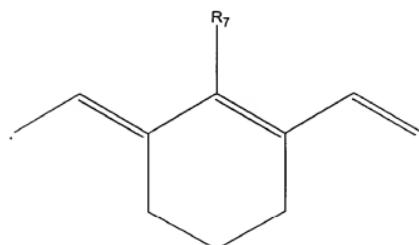
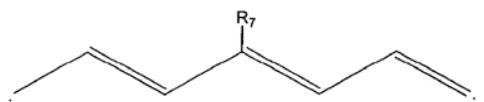
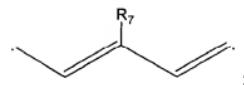
wherein

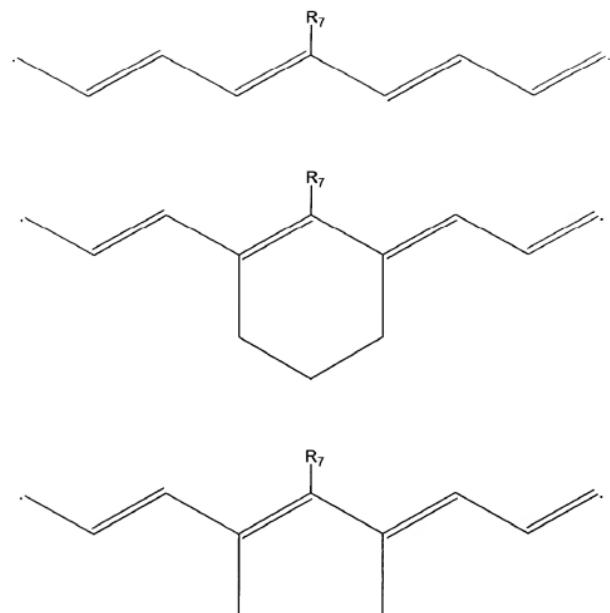
$R_1$  is a linear, saturated or unsaturated alkyl chain, having from 1 to 30 carbon atoms, wherein one or more carbon atoms are each optionally substituted by a component independently selected from an oxygen or a sulfur atoms, a  $-NH-$  or a  $-CONH-$  group, or a cyclic 4-, 5- or 6-membered grouping of carbon atoms, aromatic or not aromatic, wherein one or more carbon atoms are each optionally substituted by a heteroatom independently selected from oxygen, sulfur, nitrogen and selenium;  $W_1$  and  $W_2$  are independently selected from a benzene ring and a naphthalene ring wherein one or more carbon atoms are optionally substituted by one or more heteroatoms selected from oxygen, sulfur, selenium and nitrogen, or one of  $W_1$  and  $W_2$  is absent, or both of them are absent;  $X_1$  and  $X_2$  are independently selected from the group consisting of  $-O-$ ,  $-S-$ ,  $-Se-$ ,  $-C(CH_3)_2$ ,  $-NH-$  and  $-CH=CH-$ , wherein  $R_2$  is selected from the group consisting of  $-COOH$ ,  $-OH$ ,  $-NO_2$ ,  $-OCH_3$ ,  $-SO_3H$ ,  $-SO_3^-$ , and  $-R_8-Y$ , wherein  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are independently selected from hydrogen,  $-COOH$ ,  $-OH$ ,  $-NO_2$ ,  $-OCH_3$ ,  $-SO_3H$ ,  $-SO_3^-$ , and  $-R_8-Y_1$  where  $R_8$  is a linear, saturated or unsaturated alkyl chain, having from 1 to 30 carbon atoms, wherein one or more carbon atoms are each optionally substituted by a component independently selected by an oxygen or a sulfur atom, a  $-NH-$  or a  $-CONH-$  group, or a cyclic 4-, 5- or 6-membered grouping of carbon atoms, aromatic or not aromatic, wherein one or more

carbon atoms are each optionally substituted by a heteroatom independently selected from oxygen, sulfur, nitrogen or selenium, and wherein Y is selected from the group consisting of carboxyl, carbonyl, amino, sulphhydryl, thiocyanate, isothiocyanate, isocyanate, maleimide, hydroxyl, phosphoramidite, glycidyl, imidazolyl, carbamoyl, anhydride, bromoacetamide, chloroacetamide, iodoacetamide, sulphonyl halide, acyl halide, aryl halide, hydrazide, succinimidyl ester, hydroxysulfosuccinimidyl ester, phthalimidyl ester, naphthalimidyl ester, monochlorotriazine, dichlorotriazine, mono- or di- halide substituted pyridine, mono- or di- halide substituted diazine, aziridine, imidic ester, hydrazine, azidenitrophenyl, azide, 3-(2-pyridylidithio)propionamide, glyoxal, aldehyde, nitrophenyl, dinitrophenyl, and trinitrophenyl, provided that one of R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> is -R<sub>8</sub>-Y;

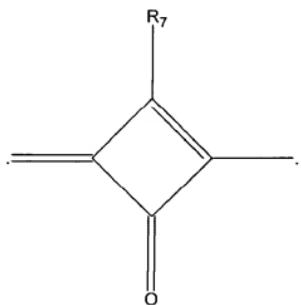
M is a counterion; and

Q is a polymethinic chain selected from the group consisting of:





and [[or]]



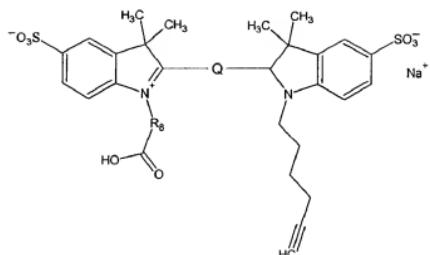
wherein R<sub>7</sub> is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, phenoxy, thiophenoxy, anilino, cyclohexylamino, pyridine, -R<sub>8</sub>-Y, -O-R<sub>8</sub>-Y, -S-R<sub>8</sub>-Y, -NH-R<sub>8</sub>-Y, wherein R<sub>8</sub> and Y are as defined above, and aryl optionally substituted by one or more substituents independently selected from the group consisting of -SO<sub>3</sub>H, carboxyl

(-COOH), amino (-NH<sub>2</sub>), carbonyl (-CHO), thiocyanate (-SCN), isothiocyanate (-CNS), epoxy and -COZ wherein Z represents a leaving group.

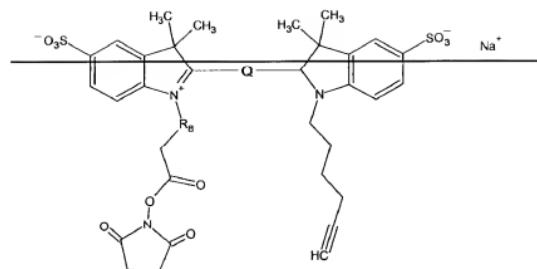
2. (original) The cyanine according to claim 1, wherein said leaving group is selected from the group consisting of -Cl; -Br; -I; -OH; -OR<sub>11</sub>; -OCOR<sub>11</sub>, wherein R<sub>11</sub> is linear or branched alkyl having from 1 to 4 carbon atoms; -O-CO-Ar, wherein Ar is aryl optionally substituted; -O-CO-Het, wherein Het is selected from succinimide, sulfosuccinimide, phthalimide and naphthalimide; -NR<sub>22</sub>R<sub>33</sub>, wherein R<sub>22</sub> and R<sub>33</sub> are each independently linear or branched alkyl having from 1 to 10 carbon atoms.

3. (canceled)

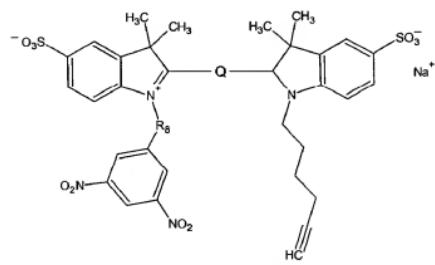
4. (currently amended) The cyanine according to claim 2 selected from the group consisting of:



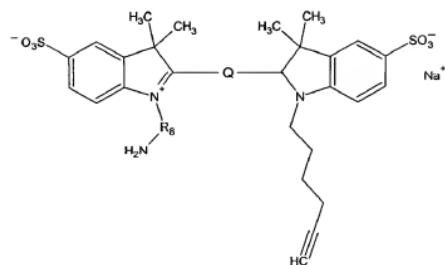
Formula (Ib)



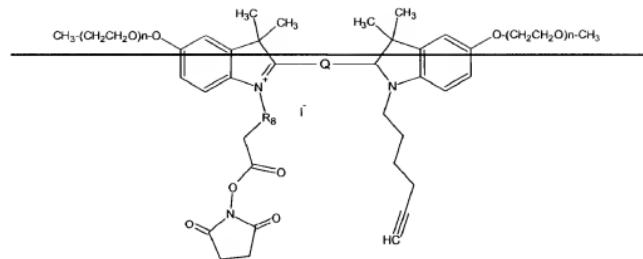
Formula (Ie)



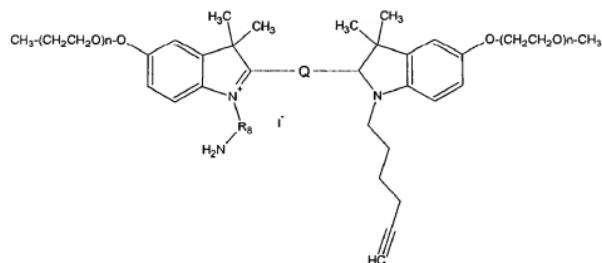
Formula (Id)



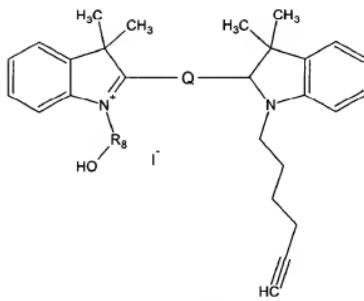
Formula (Ie)



Formula (II)



Formula (Im)



Formula (In),

wherein Q and  $R_8$  are as defined in claim 1 and n is an integer between 1 and 100.

5. (canceled)

6. (withdrawn) The conjugated cyanine according to claim 14, wherein said biomolecule is selected from the group consisting of nucleotides, nucleosides, oligonucleotides, nucleic acids, peptides and proteins.

7. (canceled)

8. (withdrawn) The conjugated cyanine according to claim 15, wherein said second fluorescent dye is N,N'-Difluoroboryl-1,9-dimethyl-5-(4-iodophenyl)-dipyrrin.

9. (withdrawn) The conjugated cyanine according to claim 15, wherein said second fluorescent dye is a transition metal complex with at least one heterocyclic nitrogen-containing ligand.

10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (withdrawn) The cyanine according to claim 1, further comprising a biomolecule conjugated through the linker arm -R<sub>1</sub>-C≡CH.

15. (withdrawn) The cyanine according to claim 1, further comprising a second fluorescent dye conjugated through the linker arm -R<sub>1</sub>-C≡CH, said second fluorescent dye being capable of emitting fluorescence at wavelengths at which the cyanine is capable of absorbing, or said fluorescent dye being capable of absorbing at wavelengths at which the cyanine is capable of emitting.

16. (withdrawn) The cyanine according to claim 1, further comprising a first biomolecule conjugated through the linker arm -R<sub>1</sub>-C≡CH and a second equal or different biomolecule conjugated through the linker arm -R<sub>8</sub>-Y, wherein the first biomolecule is selected from the group consisting of nucleotides, nucleosides, oligonucleotides, nucleic acids, peptides, proteins, vitamins and hormones, and the second equal or different biomolecule is selected from the group

consisting of nucleotides, nucleosides, oligonucleotides, nucleic acids, peptides, proteins, vitamins and hormones.